Grace

G-704 & G-714

UNI-PIVOT OIL-DAMPED GLIDE-BALANCE TONE ARMS

ALUMINUM FRAME/WOOD FRAME

G-704 G-714

"GRACE" STEREO PRODUCTS · SHINAGAWA MUSEN CO., LTD.
Tokyo Japan

The G-704/G-714 uni-pivot tone arms are highly precisioned instruments, and must be handled with great care at all times. To ensure optimum performance, read this instruction manual before commencing mounting/assembly procedures.

- These two uni-pivot oil-damped tone arms, the G-704 (aluminum frame) and the G-714 (wood frame), both feature outstanding tracing abilities. Both have been designed with the center of gravity in the most ideal position, and with a minimum of unnecessary tone arm movement.
- Optimum damping is employed in the pivotal section, with a special silicon oil damping used in the most critical position.
- Dimensions and assembly procedures are exactly the same for both types of tone arm (aluminum and wood frames).

All parts and accessories of the G-704/G-714 are shown in the following photograph (Fig. 1). Check that the complete set has been included in the packaging before commencing to mount the tone arm in the turntable.

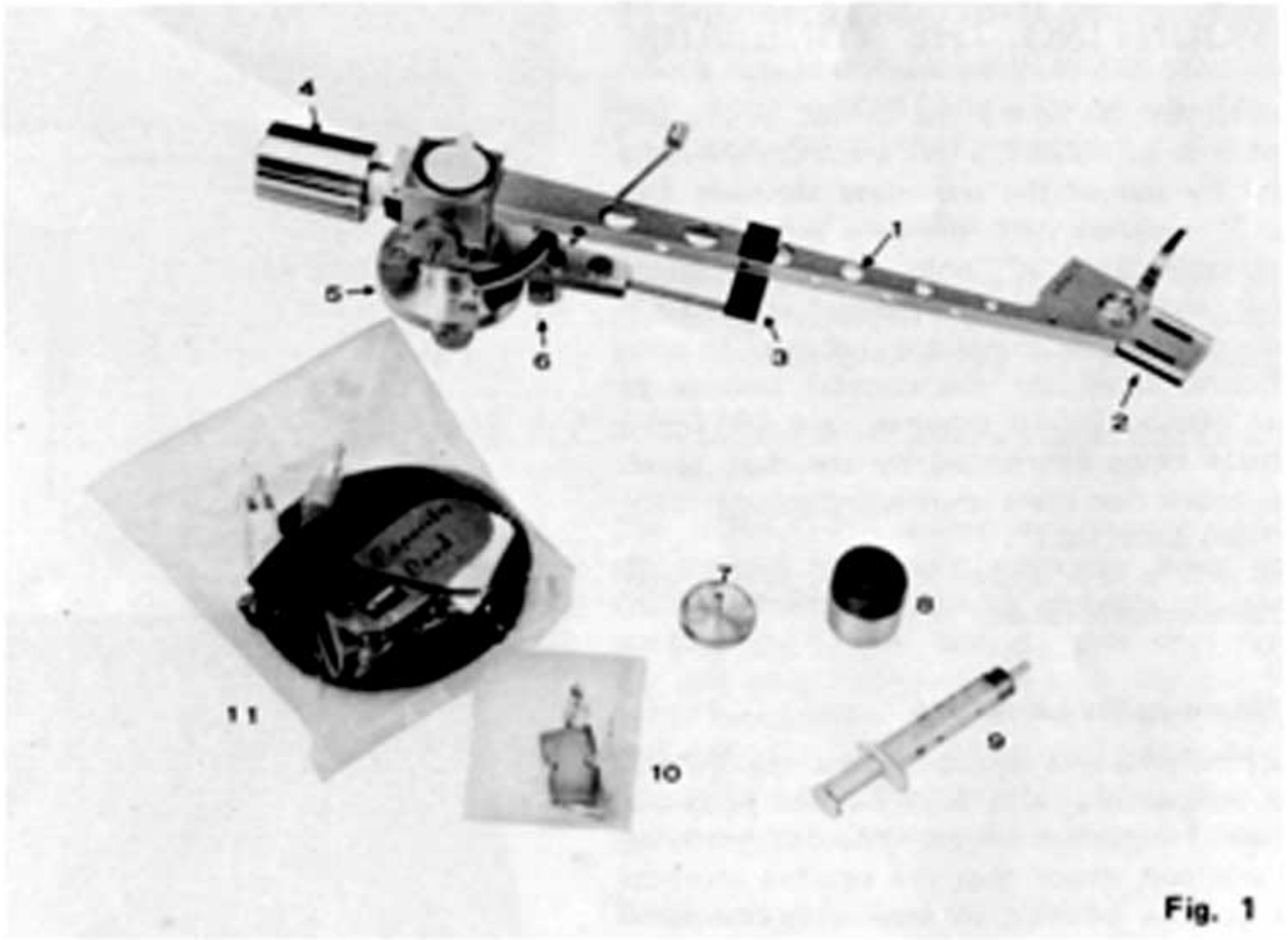

Fig. 1

1 Arm frame 2 Head plate (HP-1 & HP-1B) 3 Arm rest
4 Counter weight plus sliding weight 5 LB-II base 6 Arm director
7 Jewel bearing 8 Silicon oil 9 Oil syringe
10 Head plate accessories 11 Shielded cable (PC-4)

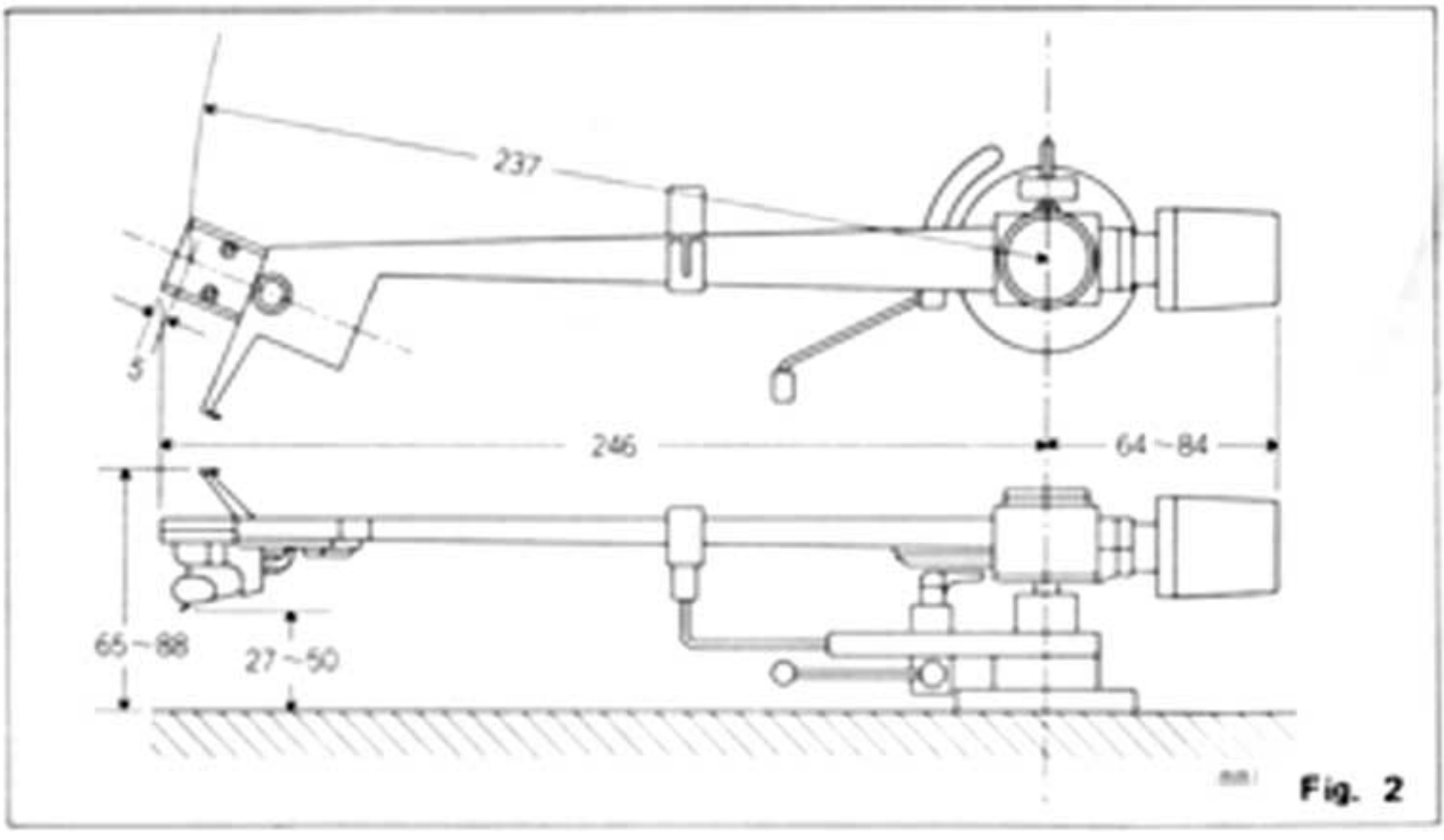

Fig. 2

Major dimensions are given in Fig. 2.

MOUNTING THE TONE ARM

First determine where the center of the arm pivot is to be located, a task made considerably easier by use of the mounting template (see Fig. 3) supplied with the tone arm. Set the "Turntable Spindle" hole at the turntable center, and the "Arm Base Center" at a suitable position on the turntable cabinet (leaving sufficient room for the counter balance to move around in - it requires upto 100 mm - without being obstructed by the dust cover. Also, check that there is sufficient space left for the head plate, etc.)
Then drill a hole approx. 28 mm in diameter at the selected location.

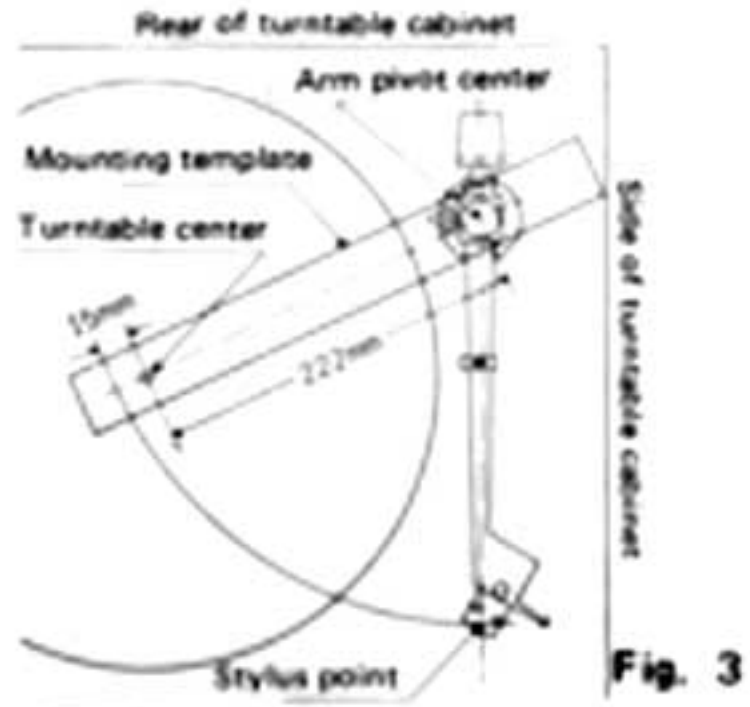

Fig. 3

■ Mounting the LB-II Base

Insert the tone arm (plus base) into the 28 mm hole temporarily, and mark out the positions for the 3 mounting screws. Without removing the arm rest, check that the selected location is a suitable position in respect to operation and playing (see Fig.s 3 & 4).
Also check that the distance between turntable center and arm pivot center is 222 mm (using the mounting template).
Now remove the LB-II base from the main tone arm shaft, and secure to the turntable cabinet with the three 3.5 mm screws supplied.

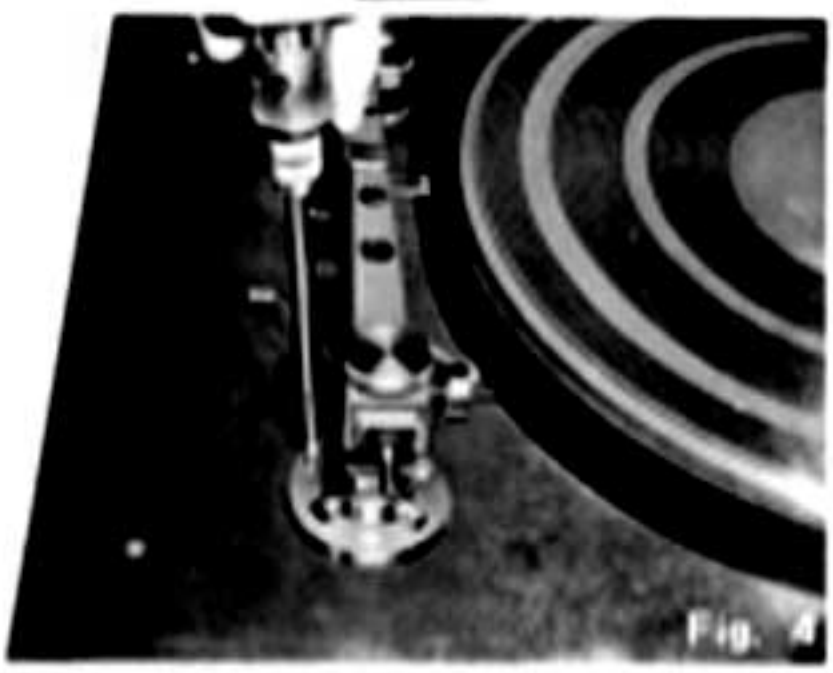
Fig. 4

■ Inserting the Shielded Cable

Insert the shielded cable through the 28 mm hole from inside the cabinet as shown in Fig. 6. Secure the cable underneath the cabinet at about 100 mm from the hole, leaving plenty of play in the cable to facilitate easier mounting and removal of the tone arm.

Fig. 5

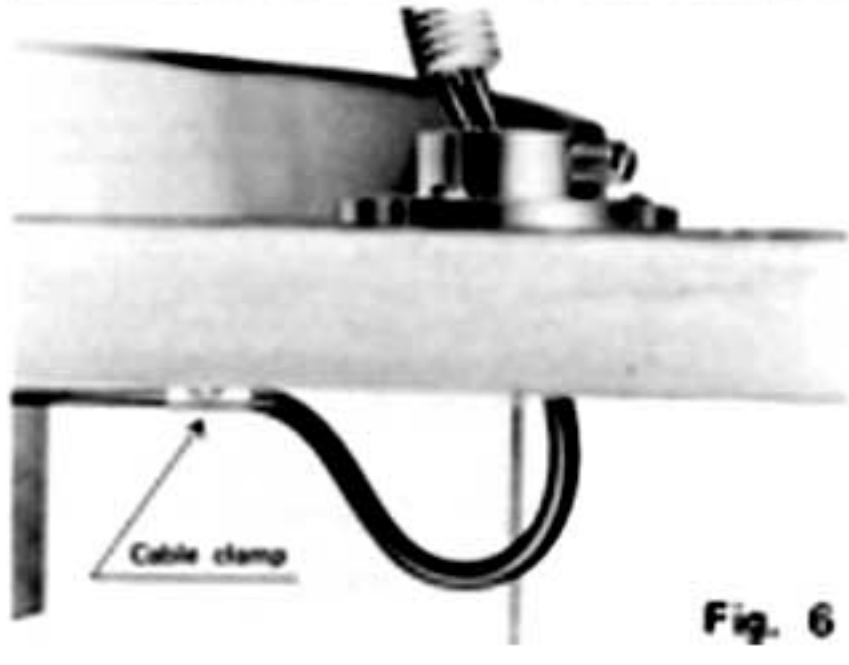

Fig. 6

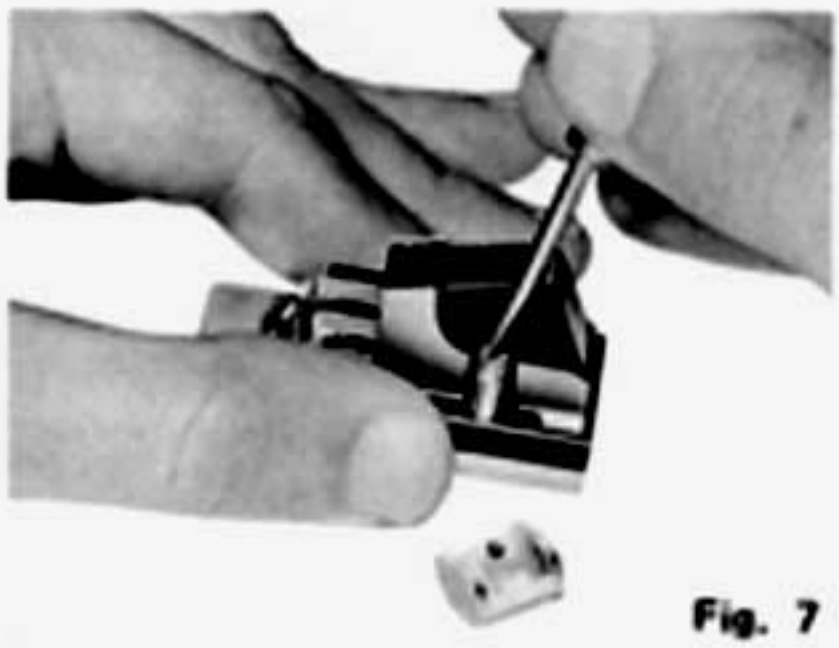

Fig. 7

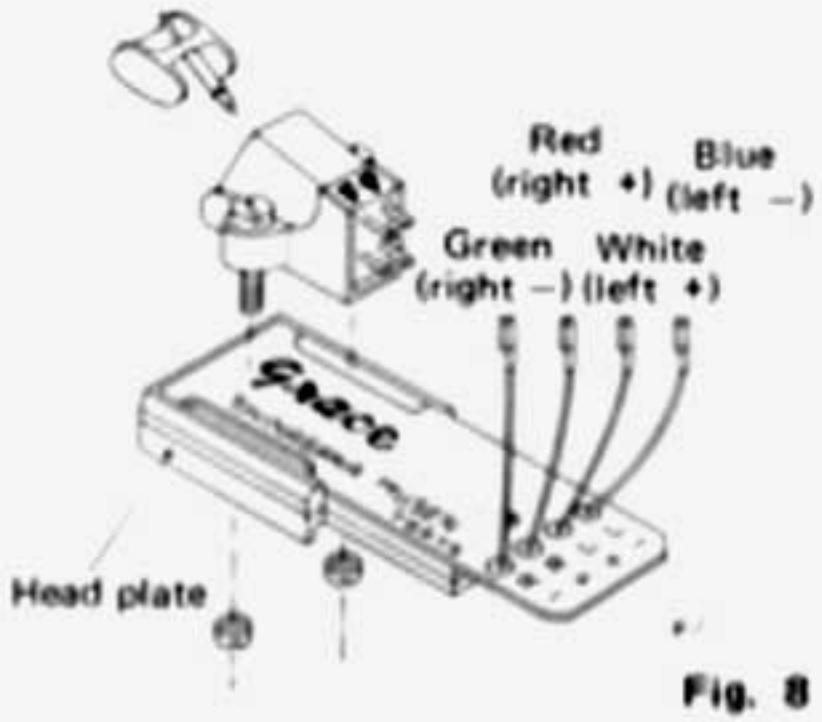

Fig. 8

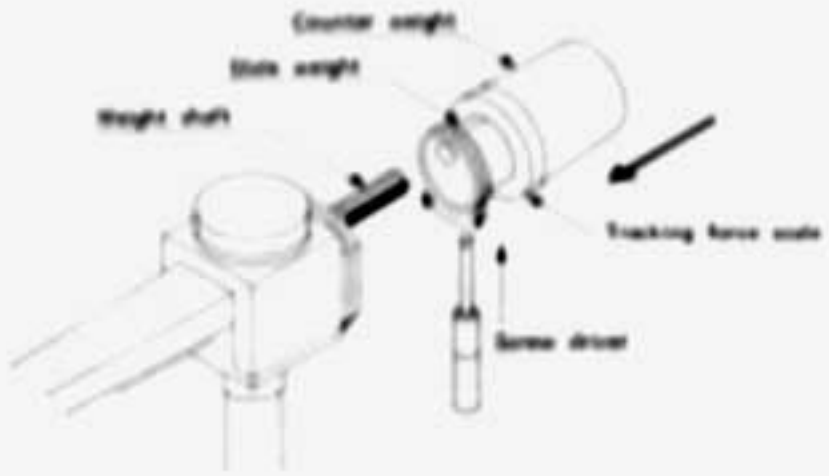

Fig. 9

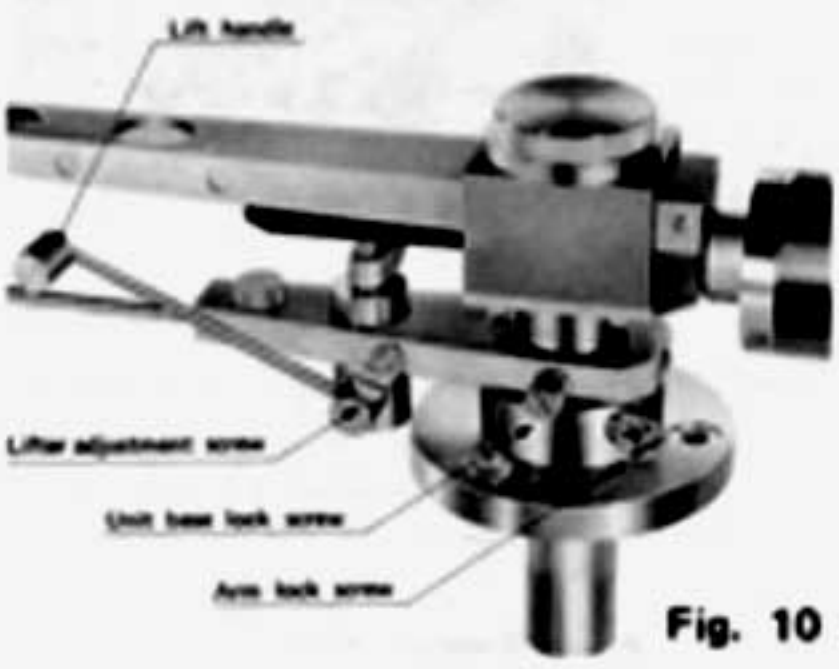

Fig. 10

■ Attaching the Cartridge to the Head Plate

Attach the phono cartridge to the head plate with 2 of the small bolts supplied (see Fig. 7). Lead connections are as shown in Fig. 8.

■ Insertion of Jewel Bearing

Remove the seal from the top of the arm pivot center, and screw in the jewel bearing (packed in a separate plastic bag for added safety).

■ Attachment of Sliding Weight and Counter Weight

The G-704/G-714 sliding and counter weights are packed inside the accessory parts box. Remove from the packing material by gently pushing out from behind, and slide onto the rear weight shaft of the tone arm (see Fig. 9). Temporarily secure the sliding weight screw at this stage, but do not tighten firmly. This screw will be tightened later after the lateral balance adjustment has been completed.

■ Inserting the Tone Arm Shaft

Connect the shielded cable to the tone arm shaft, and insert the shaft into the LB-II base. Temporarily secure the arm lock screw (see Fig. 10).

ADJUSTMENTS OF TONE ARM

Cross-sectional Diagram of Tone Arm Pivot Section

(1) Jewel bearing
(2) Pivot
(3) Oil cup
(4) Oil fin
(5) Weight shaft
(6) Slide weight
(7) Counter weight

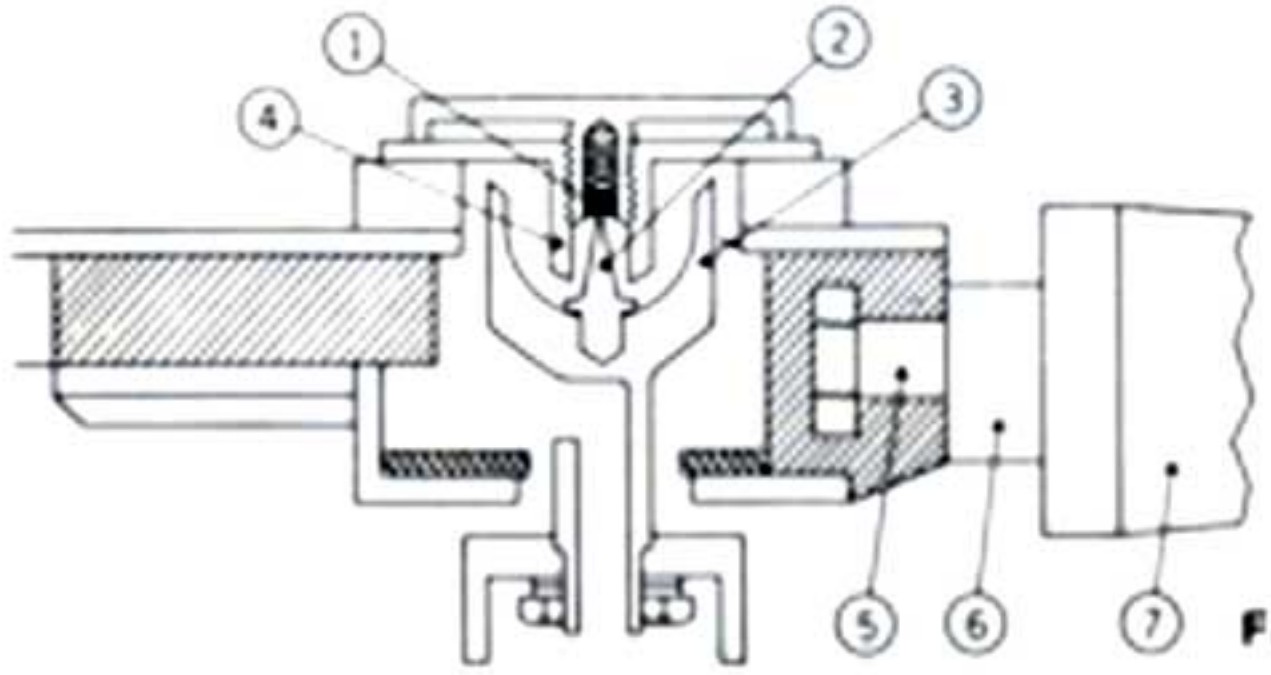

Fig. 11

■ Removal and Remounting of Head Plate

The head plate can be removed by simply loosening the lock screw (upper side) by no more than 1 revolution, and extracting. Remounting is just as simple: push in and retighten the lock screw. (See Fig. 12).

Fig. 12

■ Tone Arm Zero Balance

With head plate and cartridge inserted, rotate counter weight back or forth to make the tone arm horizontal (zero balance).

■ Tracking Force Adjustment (Arm Height Adjustment)

After attaining zero balance, align the zero position on tracking force scale ring with the reference line along the apex of the sliding weight. Rotating the counter weight in the anticlockwise direction (as seen from along the tone arm shaf) (see Fig. 13) increases tracking force in steps of 0.1 g for every scale graduation marking. A full revolution corresponds to an increase of 3 g.
Set tracking force to the designated value for the phono cartridge being used. Place a record on the turntable, and lower the stylus onto the record. Loosen the arm lock screw of the LB-II base, and adjust the height of the tone arm so that the tone arm frame shaft is horizontal with the surface of the record. Then retighten the lock screw.

Fig. 13

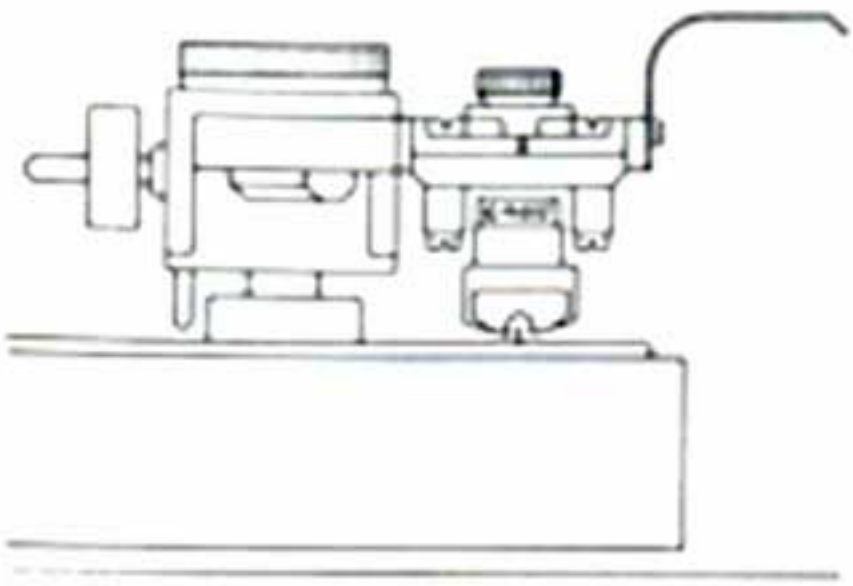

Fig. 14

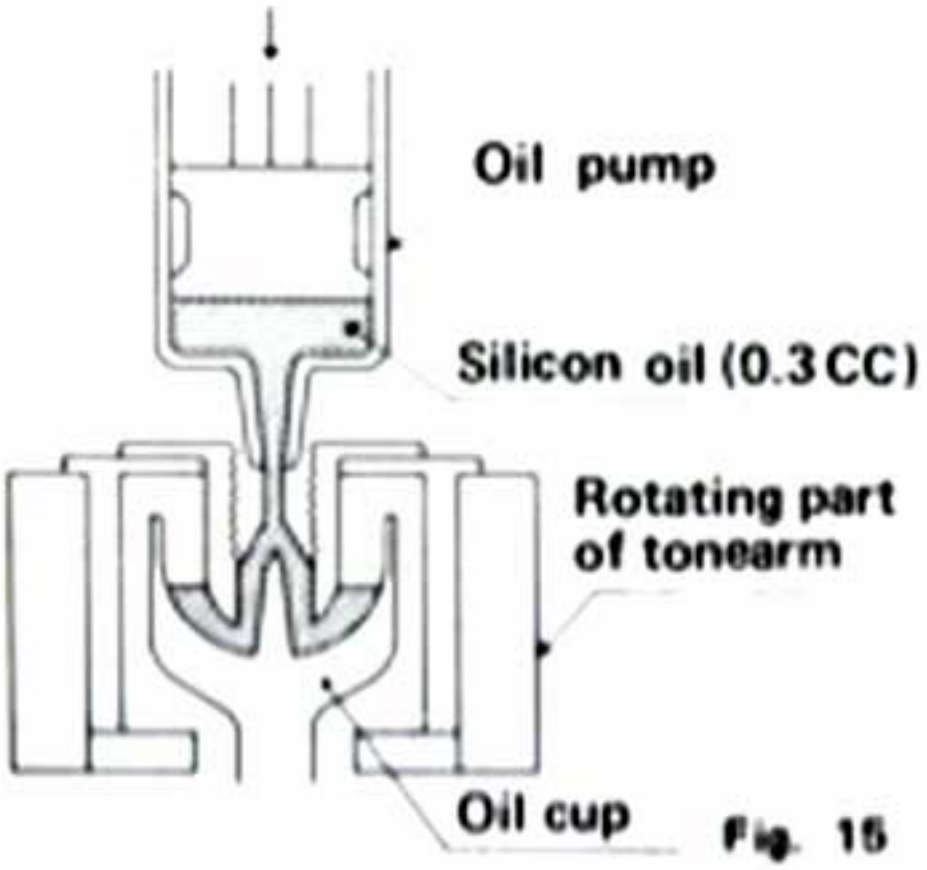

Fig. 15

■ **Overhang**

The designed overhang in all Grace tone arms is 15 mm. By using the mounting template provided to set the position of the tone arm, the overhang will naturally come to 15 mm (See Fig. 3).
(A tolerance of ±1 ~ 2 mm in this estimation is permissible).

■ **Lifter Height Adjustment**

Raise the lift handle so that the tone arm rests on the lifter. Loosen the lifter adjustment screw, and retighten when the tip of the stylus is 10 to 15 mm above the surface of the record.

■ **Lateral Balance**

The lateral balance in the G-704/G714 unipivot tone arms will vary according to the weight and center of gravity of different cartridges employed.
Adjust the lateral balance weight (by simply sliding in or out) so that the head plate is parallel with the surface of the record. (See Fig. 14).
If, however, because of the type of cartridge used, this operation is insufficient to gain perfect balance, loosen the screw securing the slide weight to the weight shaft, and displace the eccentric slide weight either left or right by a suitable amount. A combination of these two procedures will enable perfect lateral balance to be attained for all types of compatible cartridges.

■ **Prior to Insertion of Oil**

After completing all the above mentioned adjustments, make a thorough test of the system, including listening to a record .

■ **Insertion of the Silicon Oil**

The oil supplied with the tone arm is highly viscous silicon oil. First unscrew the jewel bearing from the center pivot hole (screwed in temporarily in a previous step), then draw into the syringe no more than 0.3 cc of silicon oil, and slowly and carefully force it into the center pivot hole. Since the maximum capacity of the oil cup is only a little more than 0.3 cc, do not use more than the specified amount.

● **Caution**

Insert the oil with the tone arm locked into the arm rest.
Insert the tip of the syringe into the pivot hole as far as it will go, and press the plunger down firmly but carefully.
The oil will take a little while to reach operational stability.

■ Screw in the jewel bearing as before. All adjustments are now complete. Your new Grace G-704/G-714 tone arm is assured to give you top performance and great satisfaction.

- **Precaution:** Refrain from removing the screws underneath the rotating pivot section, since there is likelihood of disconnecting lead wires.

Technical Specifications

Full length	310mm (min) ~ 330mm (max)
Effective length	237 mm
Angle of rotation	340°
Overhang	15 mm
Balance system	Uni-pivot oil-damped type
Range of usable cartridge weights	4 g ~ 13 g
Output cable	Low capacitance plug-in molded type

Accessories

Head plate HP-1 (silver)	1
Head plate HP-1B (black)	1
Low capacitance shielded cable PC-4	1
Capsule of silicon oil	1
Oil syringe	1
Instruction Manual	1
Mounting template	1

■ **After Sales Service**

Since all Grace brand tone arms are covered by warranty, there is no actual certificate included with the product. For any queries about the product and its performance, contact your nearest Grace dealer or distributor.

Grace

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